



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

59

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/845,381	04/30/2001	Norbert Rimoux	56139999-2	2747
26453	7590	03/18/2005	EXAMINER	
BAKER & MCKENZIE LLP 805 THIRD AVENUE - 29TH FLOOR NEW YORK, NY 10022			TRAN, MAI T	
		ART UNIT		PAPER NUMBER
		2121		

DATE MAILED: 03/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/845,381	RIMOUX, NORBERT
	<b>Examiner</b>	<b>Art Unit</b>
	Mai T. Tran	2121

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### **Status**

1) Responsive to communication(s) filed on 4/30/2001.  
 2a) This action is FINAL.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### **Disposition of Claims**

4) Claim(s) 1-15 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-15 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### **Application Papers**

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 4/30/2001 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### **Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### **Attachment(s)**

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

This Office Action is responsive to application 09/845381, filed April 30, 2001.

Claims 1-15 have been examined.

## **DRAWINGS**

The drawings are objected to because of minor informalities: Figures 1, 2, 3, 4, and 5 should be typewritten. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

## **SPECIFICATION**

The disclosure is objected to because of the following informalities: numerous terms used in the specification are not spelled or written in English and grammatical errors are also found. Example: page 3, line 20, "cel" is the British spelling of cell; page 12, line 22, "retour" is the French word for return.

Appropriate correction is required.

## **CLAIM OBJECTIONS**

Claims **4, and 10** are objected to because of the following informalities: claim 4, page 41, line 31, "include" is grammatically incorrect. It should be spelled includes. Claim 10, page 43, end of line 5, a "t" is missing in event. Appropriate correction is required.

## **CLAIM REJECTIONS - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims **1-15** are rejected under 35 U.S.C. 102(b) as being anticipated by Gerson (U.S. Patent No. 5,040,127) hereinafter Gerson.

**Claim 1**

A method of recognizing and learning patterns in an adaptive learning network, comprising:

receiving an input pattern made up of one or more basic components, the one or more basic components measured in event time corresponding to an order of occurrence of the one or more basic components in the input pattern (col. 2, lines 35-36, col. 3, lines 53-54);

searching in an adaptive learning network for a cel structure having a basic component of the one or more basic components starting in the order of occurrence in the input pattern (col. 4, lines 48-51);

positively reinforcing the cel structure having the basic component (col. 5, lines 16-18);

creating one or more cel structures to hold the one or more basic components and linking the created one or more cel structures to the adaptive learning network according to its event time, if not found (col. 5, lines 10-12).

**Claim 2**

The method of claim 1, wherein the step of receiving includes buffering the input pattern (col. 3, lines 46-47, lines 51-53):

**Claim 3**

The method of claim 1, wherein the method further includes negatively reinforcing one or more cel structures that have the same event time in the adaptive learning network as the positively reinforced cel structure (col. 4, lines 51-55).

**Claim 4**

The method of claim 3, wherein the method further include deleting the negatively reinforced one or more cel structures when the one or more cel structures have been negatively reinforced to a predetermined threshold (col. 4, lines 1-11).

**Claim 5**

The method of claim 1, wherein the step of creating includes creating one or more cel structures to hold the one or more basic components and linking the created one or more cel structures to a short term associated memory according to its event time, if not found (col. 4, lines 1-11).

**Claim 6**

The method of claim 5, wherein the method further includes migrating the short term associated memory into the adaptive learning network when the one or more cel structures in the short term associated memory have been positively reinforced to a predetermined threshold (col. 4, lines 1-11).

**Claim 7**

The method of claim 5, wherein the method further includes creating a semantic network linked to the one or more cel structures in the adaptive learning network, the semantic network including one or more terms that are semantically related to the linked one or more cel structures (col. 4, lines 25-41).

**Claim 8**

The method of claim 7, wherein the method further includes searching the semantic network to further evaluate the input pattern in a semantic context (col. 4, lines 44-68).

**Claim 9**

The method of claim 5, wherein the method further includes migrating one or more cel structures in the short term associate memory to the adaptive learning network when the one or more cel structures in the short term associated memory have been positively reinforced to a predetermined threshold (col. 4, lines 1-11).

**Claim 10**

An adaptive learning and pattern recognition system, comprising:  
a plurality of cel structures, each of the plurality of cel structures enabled to link to any one or combination of a parent cel structure, a cousin cel structure, and a child cel structure, wherein a parent cel structure contains an event in a pattern that occurred at event time  $t-1$ , the cousin cel structure contains an event in a pattern that occurred at event time  $t$ , and the child cel structure contains an event in a pattern that occurred at event time  $t+1$  (col. 2, lines 41-49);

each of the plurality of cel structures enabled to positively reinforce itself when an input event matches its content, each of the plurality of cel structures enabled to create a cousin cel when an input event does not match its content (col. 5, lines 16-18),

wherein the plurality of cel structures are interrelated with one another in a chronological order of occurrence of events in a pattern forming one or more paths representing one or more patterns (col. 5, lines 44-48).

**Claim 11**

The system as claimed in claim 10, wherein each of the plurality of cel structures further has one of termination attribute and glue attribute; and

a cel structure with termination attribute further has a link to a semantic network (col. 5, lines 18-21).

**Claim 12**

The system as claimed in claim 10, wherein each of the plurality of cel structures further includes:

a stimulus activity representing an activity of a cel in relation to the event in the signal that appears at the same event time as the cel in its path (col. 2, lines 59-60); and  
a context activity representing a mean value of the stimulus activity and a context activity inherited from its parent cel in the same path (col. 5, lines 18-19).

**Claim 13**

The system as claimed in claim 12, wherein a degree of recognition is determined by a context activity computed for a cel structure with termination attribute in a path (col. 4, lines 56-59).

**Claim 14**

The system as claimed in claim 10, wherein the cel structure with termination attribute further includes a reference to a procedure for further identifying a pattern (col. 6, lines 30-37). Examiner interprets a procedure for further identifying a pattern as traceback.

**Claim 15**

A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps of recognizing and learning patterns in an adaptive learning network, comprising:

receiving an input pattern made up of one or more basic components, the one or more basic components measured in event time corresponding to an order of occurrence of the one or more basic components in the input pattern (col. 2, lines 35-36, col. 3, lines 53-54);

searching an adaptive learning network for a cel structure having a basic component of the one or more basic components starting in the order of occurrence in the input pattern (col. 4, lines 48-51);

positively reinforcing the cel structure having the basic component (col. 5, lines 16-18);

creating one or more cel structures to hold the one or more basic components and linking the created one or more cel structures to the adaptive learning network according to its event time, if not found (col. 5, lines 10-12).

## **CONCLUSION**

The following is prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

1. Stentiford, Frederick W. M., U. S. Patent No. 4,955,056.
2. Wheeler et al, U. S. Patent No. 5,208,899.
3. Niki, Toru, U. S. Patent No. 5,422,981.
4. Yoda, Fumio, U. S. Patent No. 5,479,575.
5. Kaplan et al, U. S. Patent No. 5,488,719.
6. Sutherland, John, U. S. Patent No. 5,515,477.
7. Rozmus, J. Michael, U. S. Patent No. 5,729,662.

8. Watanabe, Takao, U. S. Patent No. 5,912,989.
9. Halstead et al, U. S. Patent No. 5,963,893.
10. Kortge, Chris Alan, U. S. Patent No. 6,058,206.
11. Ichiro, Imai, Japan application number 05-227687.

#### **CORRESPONDENCE INFORMATION**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mai T. Tran whose telephone number is (571) 272-4238. The examiner can normally be reached on M-F 9:00am-- 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on (571) 272-3687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M.T.T  
Patent Examiner  
Date: 3/16/05



Anthony Knight  
Supervisory Patent Examiner  
Tech Center 2100

Application/Control Number: 09/845,381  
Art Unit: 2121

Page 10